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# Eliciting patterns for product personality design: a pedagogical method for industrial design students

Shahab Pourtalebi<sup>a\*</sup>, Hanieh Bagherzadeh<sup>a</sup><sup>a</sup>*Industrial Design Department, Tabriz Islamic Art University, Tabriz, Iran*

## Abstract

The appearance of a product is a medium to interact with consumer not only in the selection and purchasing process, but also during utilization of product. The product personality as a part of interaction role of the product's appearance has influence on consumer preference. It is defined as the set of human personality characteristics used to describe a specific product and can be applied to a product appearance intentionally.

The aim of this paper is introducing pedagogical design process to equip industrial design students for eliciting personality and providing aesthetic patterns for product personality design.

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**Keywords:** Personality, Eliciting Characteristics, Pedagogical Process, Product Appearance, Product-User Interaction;

## 1. Introduction

The appearance of a product as a medium provides solution for consumer-product interaction problem with different responsibilities. People often think and talk about products as having a personality and relate to them accordingly (Janlert and Stolterman, 1997; Adiloğlu & Akıncı, 2011). Jordan (1997) defined product personality as "the set of human personality characteristics used to describe a specific product". In other words, that part of the symbolic meaning that refers to the physical product itself and is described with human personality characteristics is called product personality (Jordan, 1997, 2000).

Besides Govers et al. (2004) imply that Product personality is a high-level description of the product variant as a whole and is strongly influenced by product appearance. As a whole, the results of Govers and Schoormans's (2005) study indicate that people prefer products with a product personality that matches their self-image. It refers to the fact that consumers prefer products associated with an image that is similar to their self-concept (e.g., Belk 1988; Malhotra 1988; Sirgy 1982).

## 2. The Importance of Product Personality

Baudrillard (2006) pointed "The most wanted product today is not any raw material or machinery, but personality." Product personality has gained its place in design for at least two reasons. First, Consumers feel good

\* Corresponding author. Tel.: +98-914-915-2190; fax: +98-411-5419970.

E-mail address: [s\\_pourtalebi@tabriziau.ac.ir](mailto:s_pourtalebi@tabriziau.ac.ir).

about their choices because they fit their own self-concept rather than the group norm (Solomon, 1999). Second, when offering a range of product variants that fulfill the same functional need, yet have different product personalities, a company enables more consumers to select a product variant that expresses their own individuality. As such, they can increase their market share. This is especially relevant in mature markets where differentiation in price and functionality is difficult (Govers and Schoormans, 2005).

### 3. Background

In 1997, Janlert and Stolterman discussed that product personality can have consequences for the users interaction with the product. The products' human-like characteristics serve as an analogy for their behaviour and capabilities (Janlert and Stolterman, 1997; Aggarwal and McGill, 2007; Donnelly, 2009). Product personality can thus help users to anticipate how to interact with a product.

Hsu et al. (2000) implies some personality characteristics, such as relaxed and honest, may be difficult to identify in products. For those personality characteristics, a discrepancy between designers and consumers in their perception of the product is likely to occur.

Kumar indeed found evidence that visual aesthetic characteristics beside evaluations of product appearance are linked to perceptions of product personality.

In 2009, Mugge et al. developed a product personality scale that can be used for systematically assessing the way users perceive the personality of a new product during the design process. They believe it is essential that the particular product personality that designers aim for during the design process is correctly understood by users. Nevertheless, this does not imply that the creation of a specific personality characteristic in a product is straightforward and that the product personality scale may serve as a recipe for creating products with predetermined personalities. In fact, designing products with a predetermined personality is a complex and creative design task (Mugge et al., 2009). Govers et al. (2004) believe designers can translate personality characteristics into the product form in a way that consumers understand.

### 4. Methods

The process of Product Personality Design has been applied to a studio of industrial design and has been developed and tested during 8 semesters with participation of 178 students in the studio.

In a general view, this studio is conducted based on the common process of product design; i.e. just the needed parts are adjusted with the studio. Also some parts are done by focus on educational practices according to training-educational obligations. This course can be caught in the 7th semester in B.A. of Industrial Design field so the students have some primary skills such as perception of the generality and the logical process of a product design, visual literacy and form recognition, ability of form and function analysis, knowing the general concepts of product design like the production and launching method, and also the ability of analyzing the customer's behavior.

### 5. Eliciting Process

Choosing personality characteristics has some stages which are done prior to the eliciting process. In fact, these personality factors are chosen according to criteria Govers and Schoormans (2005) have indicated. So only the personality solutions of eliciting process are represented in this paper; even the process of applying these solutions according to its variation and relation with design's context is not discussed here.

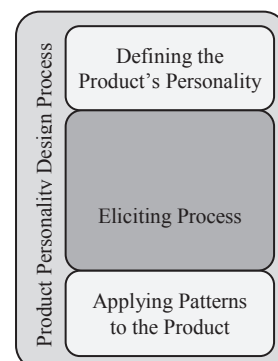


Figure1. Product personality Design Process

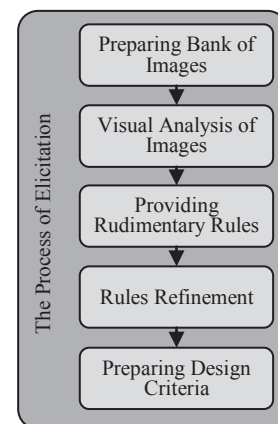


Figure2. The Process of Elicitation

### 5.1. Preparing bank of images:

Students are being ready for this stage by some practices. For example, portrait of different people are shown to students and they are asked to guess their personality. The appearance is not a part of one's personality; however the impact of appearance on our inference about person's personality is supported by many experimental results (Jones, 1990). Desmet et al. (2008) expressed that we infer a person's personality from his or her appearance systematically. Mugge et al. (2009) have developed a product personality scale that can be used for systematically assessing of the way users perceive the personality of a new product during the design process. In the next exercise, 20 personalities which are chosen as the main personalities by Mugge et al. (2009) are described for students, and then their job is finding pictures which have the most relation with that personality from user's point of view.

Doing these exercises, the students are ready to choose related pictures to their topic, so in this stage they are asked to prepare a bank of different images from nature, creatures, things and products relevant to their topic's personality. The number of pictures depends on time, importance and the abilities of the students.

### 5.2. Visual Analysis of the Pictures

The abilities and capacities of the researcher (designer) are become of great importance in at this stage. S/he should have high visual literacy, appropriate sketching and analyzing ability and critical mind.

There are 3 levels including supposition, separation and evaluation. At supposition stage, the researcher is to observing the pictures and guessing about the reasons of visual personality inspiration. At separation stage, the visual outcomes are being drawn separately, and at evaluation stage the visual accordance of drawn materials to the personality is evaluated. This three staged cycle will be repeated up to the level in which a reliable result is gained and the researcher be ensure that a unique and utilizable results are achieved.

The supposition stage is a conceptual process which is extremely depends on the ability of researcher (designer). Brunel and Kumar (2007) found that visual aesthetic characteristics, such as simplicity, harmony, balance, unity, dynamics, timeliness/fashion, and novelty are linked to perceptions of product personality.

The separation stage is accompanied by drawing and explanatory writing. Each discovery by researcher (designer) is being drawn separately and be judged by himself how much it could transmit the desirable personality. The choice between drawing the visual detections separately or in a combination with other visual elements is the result of student's critical mind. At first, s/he tries to separate the elements as much as possible. If the result is not satisfactory, it could have two reasons; one is his/her mistake in recognizing the right visual factor in creating personality, another is the necessity of companionship with another visual factor presented in the picture. Determining the efficiency of the detected pattern can be done in different ways. In the first stage, the researcher (designer) can give score to the efficiency of the visual pattern by himself because s/he knows about it more than others. The group decision of students is another source in the class. Yet the best and precise is conducting a pictorial questionnaire and interviews. In this manner, the designer transmits part of his findings which have passed the first levels of evaluation to some papers and uses them as questionnaire. Researchers such as Govers and Schoormans (2005) and Mugge et al. (2009) conducted some instructions for these kinds of questionnaire which can be used at this stage.

### 5.3. Providing Rudimentary Rules (RR)

At this stage, the results of the evaluation are placed beside each other and be classified. Patterns with high scores should have been categorized in a new format. In fact, this stage is a transitive phase which changes the visual patterns into rudimentary rules. So verbalization (defining the visual concepts) and classification are two major foundations of this stage.

As Dörner (1999) indicates, verbalization helps in finding the weak parts of

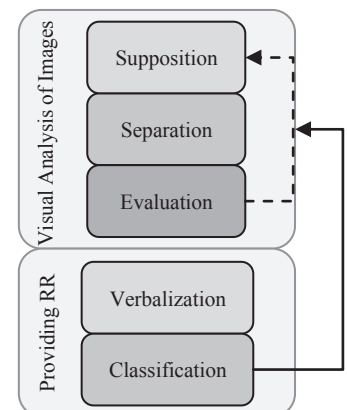


Figure3. The Process of Providing Rudimentary Rules

one's ideas. A simple practice for teaching verbalization is that we ask students to suppose they want to describe their visual patterns through phone. Thus they will learn to pay more attention to details and status. The result of this exercise is conversion of visual patterns into rudimentary rules.

After that, the rudimentary rules are divided into 2 groups in order to make the researcher (designer) find out the shortages: rules regard status and ones regard details. As Mugge et al. (2009) indicates, beside all recognizable product aspects, some inconspicuous details of the product design can play an important role. So it is needed all relevant product aspects to be designed in such a manner that the whole product is perceived as having the desired personality (Mugge et al., 2009). As the appearance of a product is consist of general status, lines, surfaces, points, color, texture and interface, component's arrangement, etc. all effective in inspiring personality of the product, the designer should have enough rudimentary rules for all these classes in order to use all the visual potentials in the design process. After classification, if the student recognizes that the rules of each class are not sufficient, s/he should get back to the analysis phase and use picture analysis for removing the loss.

#### 5.4. Refinement of the Rules

The goal of this stage of research is refining the rudimentary rules founded out from last stages. These rules must be very precise and pure to minimize the possibility of any misunderstanding and thus make these rules verifiable. This stage includes: finding contradictions, excluding them and redefining the rule.

At the first section, students should find pictures correspond to each rule although they do not inspire the personality of that rule. This status is called rule's contradictory and its subtraction from the rudimentary rule causes development and completion of the rule. These pictures can be of nature, creatures, artifacts or products. Sometimes, students are allowed to find contradictions based on their own drawn pictures. At the second part, researcher (designer) starts to analyze the contradictory pictures to eliminate the contradictions by identification of their real reason. And the last part is redefining the rule.

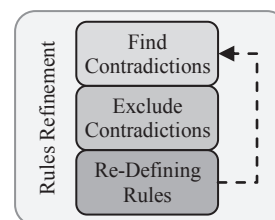


Figure4. The Process of Rules Refinement

#### 5.5. Listing verifiable rules

The results of refinement stage are developed rules which are mainly verifiable. These developed rules are listed according to a check list of design criteria for using in design phase. As mentioned before, all rules will be in their own place and class. This classification is used in preparing the final list too.

### 6. Design as a Research

Every research has some rules give it credit. It is tried in the present design process to observe all the research obligations in order to achieve accurate and precise results. In fact, it is expected that the students attain some rules and patterns with acceptable validity and reliability through practice and sketching according to a regular process. Therefore, the basis of this design process is based on a popular scientific research and it is tried to convert the qualitative data into quantitative ones by the most appropriate tools and methods.

Every research requires two factors to be acceptable; reliability and validity. These two parameters determine if the results are accurate and precise. In fact, the accuracy of the test results and its coordination with the hypothesis will be evaluated.

- **Reproducibility:** This design process is repeated among Industrial Design students during 8 semesters in the same condition. The results of the analyses were almost the same according to the variety of subjects, references and researchers for a certain personality.
- **Verifiability:** Using the same aesthetic results for designing different products was almost proceeded similarly in transmitting common personalities

## 7. Conclusion:

Product's personality, as a function of product's appearance, is a factor which can result in customer's preferences. So the whole visual capacity of the product should be utilized. An ordered and purposeful path is needed to achieve this goal. The process of product's personality design is a creative process which needs two elements: First, researcher (designer) abilities and capacities; second, her/his commitment to the instruction of design.

As detecting and supporting of visual elements which creates personality is possible during the research process, the present process tries to cover all of the critical phases of the research based on a research pattern. Figure 5 concerns comparison and adaptation of the levels of suggested process and the levels of common researches. This adaptation causes the final results of the design process to be valid and reliable for the other levels of product design (Applying rules to the Product's appearance).

A potential problem for the use of product personality is that designers and users may perceive the meaning of products differently (Hsu et al., 2000). So it is recommended that designers use the scale of Mugge et al. (2009) to verify their expertise on product personality during the design process by testing whether the intended personality characteristics are indeed recognized by consumers.

The suggested method in this paper concentrates on the eliciting of visual patterns and does not introduce a complete design process because there is no obligation on using a certain method in previous and next phases of design of product's personality and different methods can be utilized. It is not denied that the existence of a method with more adaptation in previous and next phases is possible and this will be the mission of future researches.

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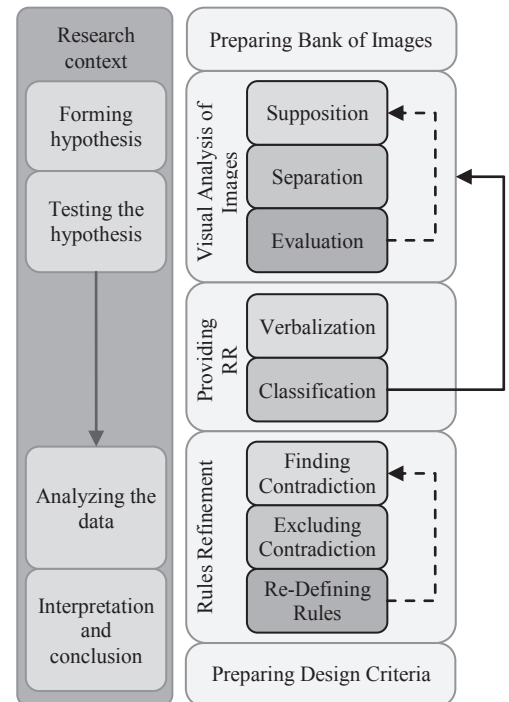


Figure 5: Adaptation of the Product Personality Design Process to Research Context

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